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1 RECORD OF ORAL HEARING  
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3 UNITED STATES PATENT AND TRADEMARK OFFICE  
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6 BEFORE THE BOARD OF PATENT APPEALS  
7 AND INTERFERENCES  
8  
9

10 *Ex parte* CARL G. DeMARCKEN, *et al.*  
11  
12

13 Appeal No. 2010-000280  
14 Application No. 10/098,580  
15 Technology Center 3600  
16  
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18 Oral Hearing Held: January 20, 2011  
19  
20

21 Before HUBERT LORIN, ANTON W. FETTING and JOSEPH A.  
22 FISCHETTI, *Administrative Patent Judges*.  
23

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35 The above-entitled matter came on for hearing on Thursday, January 20,  
36 2011 commencing at 9:26 a.m., at the U.S. Patent and Trademark Office,  
37 600 Dulany Street, Alexandria, Virginia, before Deborah Rinaldo, Notary  
38 Public.  
39

P R O C E E D I N G S

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MR. MALONEY: Good morning. This is Dennis Maloney calling from Fish & Richardson regarding Appeal Number 2010-280.

JUDGE LORIN: Thank you, counsel. This is Hubert Lorin, presiding judge. We also have Judges Fetting and Fischetti on the panel. When you are ready, you have 20 minutes. You may begin.

MR. MALONEY: Thank you. This morning I'm going to discuss four claims. Claims 28, 29, 33 and 36, time permitting.

Before I discuss the claims, I want to give you a little bit of background with respect to this invention.

JUDGE FETTING: Counsel, if time permits, would you address claim 37 as well?

MR. MALONEY: Okay.

JUDGE FETTING: Thank you.

MR. MALONEY: With respect to this invention, this invention is a technique for predicting seat availability on a flight.

In particular my client, IPA Software, had developed large-scale or low fare search algorithms that iterated over a large number of flight possibilities and as a result of this would produce large numbers of combinations of possible answers for getting from point A to point B on an airline.

They recognized during this process that not necessarily all of the these flight possibilities would in fact -- would be able to be sold. In other words, there would not necessarily always be seats available on these flights.

And the infrastructure in the airline industry for dealing with this has to do

1 with a seat availability query that's sent to an airline's revenue management  
2 system. And that query essentially executes an algorithm that determines  
3 whether or not, based upon the query whether or not the airline would be  
4 willing to sell a seat on a particular flight. And that algorithm is designed to  
5 maximize the profit or revenue for any particular flight.

6 My client recognized that if you have a large number of possible answers to  
7 get from point A to point B but most of the answers will not have available  
8 seats on it, that's not going to be a very good experience for a user of the  
9 system.

10 So they decided that they would try to figure out a technique for predicting  
11 how this availability system of an airline were to respond. And the reason why  
12 they do that rather than actually sending out the actual queries is because it  
13 takes time for that algorithm to be executed and get an answer back and also a  
14 cost associated with processing an airline query at an airline.

15 So that is essentially the background. This particular invention here deals with  
16 a caching mechanism that provides a predicted answer to an availability query.  
17 What it does, it uses cache of previously executed and stored availability  
18 queries and the associated answers and a retrievable mechanism that looks for  
19 either an exact or an approximate match or queries.

20 Essentially there are three main aspects to this invention in claim 28,  
21 determining whether at least some of the fields in the storage seat availability  
22 query either match or are substantially close in characteristics to corresponding  
23 fields in the user's seat availability query, retrieving and answering a  
24 corresponding historic query matching the seat availability query from the  
25 cache and returning the retrieved answers or predicting answers to the user's

1 seat availability query. Are there any questions at this point?

2 JUDGE FETTING: No.

3 MR. MALONEY: So the Examiner relies upon reference to Bailis. Bailis is a  
4 telephone switch system that uses a database and a cache to store frequently  
5 accessed items from the database. Bailis describes the stated management  
6 system using a cache to speed up processing.

7 Bailis, aside from not teaching any of the features pertaining to travel  
8 planning, does not teach any of the aspects involving prediction. And in  
9 particular, Bailis' system does not disclose, among other things, this idea of  
10 having inexactness in what you are looking for.

11 So I'm going to give you a practical example of what I mean by this. If one of  
12 you were looking to get a flight from New York to Washington leaving at  
13 9:00, we may not -- my client may not have any information regarding flights  
14 from New York to Washington leaving at 9:00. However, they may have  
15 information regarding flights leaving from New York to Boston at 8:00 or  
16 10:00.

17 And based upon historical patterns, they can determine whether or not it's  
18 more likely than not that a seat would be made available for you on that 9:00  
19 flight even though there's no data in the cache that exactly corresponds to that.  
20 So the idea here is that by judicious use of the information that's in the cache,  
21 one can make a prediction with a certain degree of confidence that the answer  
22 is going to be correct, that the answer that's retrieved can be used to  
23 eliminate -- for example, eliminate possible flights and answers that are being  
24 sent back to the user.

25 But that is something which Bailis clearly does not describe. Bailis is a

1 telephone switch. And Bailis, like most caches that I'm aware of, need  
2 exactness.

3 In other words, if Bailis is looking for a particular telephone number, Bailis  
4 has to get that telephone number or has to get the information for that  
5 telephone number or has to get the pathway to connect two telephone numbers  
6 up, whatever it exactly is that Bailis wants to do with its cache because clearly  
7 in a telephone switch system we cannot have inexactness.

8 We're looking for my telephone number and Bailis instead returns my  
9 neighbor's telephone number. That just would not work and for most caches  
10 that would never work.

11 JUDGE FETTING: Counsel, what you just spoke to about for the last two or  
12 three minutes seems to speak more to claim 33 than to claim 28 because claim  
13 28 appears to be broad enough to read on exact matches as well as  
14 approximate matches.

15 The Examiner clearly was articulating an exact match. And it's difficult to  
16 see -- for me to see how Bailis does not describe caching for exact matches.

17 MR. MALONEY: So we have to interpret claim 28 properly. Claim 28 has  
18 logic for two conditions. You either check to see that there's an exact match  
19 and you check to see if there's an inexact match.

20 So for any one particular answer in the cache, it's going to be one or the other.  
21 You cannot have something that's exact and inexact. It's either exact or  
22 inexact.

23 But that doesn't prevent the computer system to have logic which tests for both  
24 those conditions. So that's the point of contention here between the Examiner  
25 and myself.

1 The Examiner is trying to use the word "or" in that claim to somehow say that  
2 he can avoid examining the inexactness aspect of claim 28. But that's part of  
3 the logic of the instructions that are in that computer. It's not an optional step.  
4 It's logic. It's simple computer logic that you look for one or the other  
5 condition.

6 JUDGE FETTING: Yes, but Bailis would have to do that.

7 MR. MALONEY: No, Bailis would not do that. Bailis only looks for the first  
8 condition. It only looks for an exact match, anything based upon an exact  
9 match.

10 JUDGE FETTING: Excuse me, counsel, but they are two complimentary  
11 conditions. If it's not an exact match, it's necessarily other than an exact  
12 match. And the claim allows you to just go on if it's an exact match.  
13 Essentially the Examiner is saying if it is an exact match, it doesn't matter. I'm  
14 not going to worry about that because it's outside the scope of claim 28.

15 MR. MALONEY: I think this is all nonsense, frankly. We have a computer  
16 system that has some software in it. The software looks to see if there's an  
17 exact match in the cache, which is something that Bailis does, and looks to see  
18 or it looks to see if there's an inexact match in the cache. So sometimes it's  
19 going to retrieve an exact match but sometimes it's going to retrieve an inexact  
20 match.

21 Bailis' system is not capable of retrieving an inexact match. Yet the  
22 commercial embodiment, if you will, of this invention would retrieve exact  
23 and inexact matches. It makes no sense to try to argue away the second feature  
24 of that claim. It's a limitation of the claim.

25 JUDGE FETTING: Counsel, we refer to this as an alternative limitation.

1 MR. MALONEY: It's not an alternative limitation. It is part of the logic or  
2 the software that's in the system. This is not an alternative limitation.

3 JUDGE FETTING: I understand your point.

4 JUDGE FISCHETTI: Counsel, you used the word "system" there and I think  
5 that explains our position. Your method claim is exactly that, a method. It's  
6 not drawn to the system. We understand that a system claim might have to  
7 include that coding, but this is a pure method.

8 The method that you describe in claim 28 doesn't even call in for programming  
9 steps executed on a medium. So at that point there's a departure from what  
10 you are saying and what you are writing.

11 MR. MALONEY: So you are saying that the system claim is patentable but  
12 the method claim is not?

13 JUDGE FISCHETTI: I'm saying in the system claim we will recognize that  
14 the alternative configuration exists as --

15 JUDGE FETTING: There are no system claims. They are all method claims.

16 JUDGE FISCHETTI: But, counsel, those were your words, system.

17 MR. MALONEY: We have computer program claims and we also have -- we  
18 have computer program claims and method claims.

19 JUDGE FETTING: Which are your computer program claims?

20 JUDGE FISCHETTI: So the computer program product would have to  
21 inherently include those if conditional clauses.

22 MR. MALONEY: Right.

23 JUDGE FISCHETTI: But not -- claim 28 would be not that case.

24 MR. MALONEY: One of the issues we have here, obviously, is that much  
25 change in the law had gone on between the time that this application went to



1 the appeal process and the point we arrive at now and -- with respect to 101  
2 and other types of issues.

3 But again, even in the method of this system, it's not an alternative you retrieve  
4 one or the other. It's not a retrieving either a match or inexact match. It's  
5 determining that. If it thinks it's retrieving, I would understand. You are  
6 determining if either one of those two conditions are present in the claim and  
7 then you retrieve the answer corresponding to the match.

8 But Bailis' system can't do that. Bailis' system cannot determine either one of  
9 those two conditions. It only determines one condition.

10 And my guess is that if we had an infringing system here that the -- and the  
11 infringing system only had one of those conditions, in other words, the Bailis  
12 conditions, that exact match, in other words, they were just caching seat  
13 availability queries and basically, you know, a much simpler system, not  
14 trying to predict anything, just trying to make a cache of these things, then I  
15 could see where that person would say, well, we don't infringe because we  
16 don't have this other condition that is inexact match.

17 JUDGE FETTING: Counsel, we have several more claims to get through and  
18 we are low on time, if you could move on.

19 MR. MALONEY: Okay. So with respect to claim 29, claim 29 talks about  
20 storing queries, including one more query field for airline name and et cetera.  
21 The Examiner has not given any consideration to any of the features regarding  
22 the airline problem that's being solved by these claims.

23 And I realize that the Board, based upon some prior decisions for this client,  
24 chooses to give no patentable weight to these types of data. But this is not  
25 music or anything like that. All these recitations here affect the way in which

1 the steps of this claim are performed.

2 This claim would not -- this claim would not work in Bailis' system and Bailis'  
3 system would not work in the system described by these claims or the methods  
4 described by these claims or the computer program described by these claims.

5 With respect to claim 33, claim 33 requires the matching is approximate  
6 matching, that the queries be matched to at least some of the fields of a query  
7 stored in the cache.

8 So for this claim the Examiner goes into this reasoning which I'm not exactly  
9 clear but basically saying that that's still redone in an exact match. I don't  
10 understand the reasoning. He says something along the lines that approximate  
11 can be construed as being very similar and nearly identical and he somehow  
12 says that includes being exact. And I just don't understand where very similar  
13 or nearly identical means exact. But that's what he said. I do not understand  
14 that.

15 With respect to claim 36, claim 36 requires determining a threshold time  
16 according to query time. Now, Bailis talks about time. Bailis has a time  
17 where if the answer in the cache is there for too long, Bailis will invalidate the  
18 answer.

19 That's not what this is talking about. This is talking about that we look at the  
20 query factor. So in this particular claim, the query factors are, for example, the  
21 date of the query, the flight number, origination, things like that.

22 And we determine from those query factors whether or not we can consider the  
23 answer in the cache stale. So for example, a flight from New York to Boston  
24 is going to most likely be considered stale a lot quicker than a flight from New  
25 York to Kalamazoo, Michigan, because of just the nature of travel planning.

1 And Bailis does not ever mention any aspect with regard to looking at the  
2 query factors to determine whether or not the answer is stale. Bailis simply  
3 invalidates the answers based upon changes in the database.

4 That's not exactly what we're doing here. We're looking at -- we don't have, if  
5 you will, a database that we're retrieving answers from. We're basically just  
6 collecting a bunch of availability queries that have been sent that this cache  
7 can intercept, some of which are done proactively, some of which are just done  
8 for other customers and saved, and we're using that information to try to figure  
9 out what's going to happen with another availability query.

10 So there's no database per se that we're trying to access that has the exact  
11 answer. The exact answer is the airline's revenue management system which  
12 we're trying to avoid which Bailis doesn't avoid. Bailis doesn't have the  
13 answer. Bailis goes to the database to get the answer.

14 That's not what we try to do. We try to first find if there's an inexact match. If  
15 there's an inexact match, then we try to use that answer to arrive at a prediction  
16 with respect to availability.

17 JUDGE FETTING: Counsel, so in claim 36 you are saying that the query  
18 factors themselves are determining the time that is used to determine whether  
19 the query is stale or not?

20 MR. MALONEY: Exactly.

21 JUDGE FETTING: Okay, thank you.

22 MR. MALONEY: Now, with respect to claim 37, you said you had an  
23 answer --

24 JUDGE FETTING: I just wanted you to address that too because it seemed as  
25 though in both claims 36 and 37 it seemed that the Examiner was saying -- he

1 was giving no patentable weight because we are talking about nonfunctional  
2 descriptive material. So I wanted to see how you characterized the data in  
3 claim 37.

4 MR. MALONEY: So claim 37 is very simple to address. In claim 37 we have  
5 this idea of a confidence factor. So again we're talking about predicted  
6 answers to these queries and we have a system that can determine whether or  
7 not a particular answer would have a high confidence or low confidence in  
8 terms of being correct.

9 And we can figure out this confidence factor using a number of different types  
10 of models, for example, to figure out. This confidence factor can be stored  
11 with the retrieved answer.

12 And we also mention in the specification that the answer is going to come  
13 from other types of sources rather than just seat availability queries. But that's  
14 aside at this point.

15 So when you retrieve the answer you are also getting an estimation from the  
16 system as to whether or not you should trust the answer which is not  
17 something that is described in Bailis. And Bailis always has the answer. If the  
18 database in Bailis changes, then the cache is invalidated and it's replenished.

19 But here we don't wipe out the cache every time there's a change in seat  
20 availability because we've actually collected all these things and we may  
21 assign a confidence factor that says you can't trust this answer. So you may  
22 want to go and in fact do a query to the airline's revenue management system.  
23 But that's again something for another system to determine how they want to  
24 use this answer.

25 Just because confidence factors are known statistics does not mean that it's not

1 entitled to be given patentable weight.

2 JUDGE FETTING: Counsel, the question is, is the confidence factor  
3 nonfunctional? Do you actually use the confidence factor?

4 MR. MALONEY: Sure. The confidence factor is functional because it's used  
5 to figure out whether or not you should trust the retrieved answer.

6 JUDGE FETTING: And that's the last limitation, accepting the predicted  
7 answer or not based on --

8 MR. MALONEY: Yeah. It affects the outcome of that determination, and  
9 that's whether or not you accept that predicted answer.

10 JUDGE FETTING: Okay. That answers my question. I don't have any  
11 further questions. Doesn't seem like we have any further questions at this  
12 point.

13 MR. MALONEY: Okay. Well, thank you very much.

14 JUDGE LORIN: Thank you, counsel.

15 (Whereupon, the proceedings at 9:47 a.m., were concluded.)